23. A monoclonal antibody which (a) binds to a soluble extracellular domain sequence of an Apo-2 polypeptide which consists of amino acids 1 to 182 of SEQ ID NO:1 and (b) stimulates apoptosis in at least one type of mammalian cell *in vivo* or *ex vivo*.

24. A monoclonal antibody which binds to a soluble polypeptide which is (a) an extracellular domain sequence of Apo-2 polypeptide which consists of amino acids 54 to 182 of SEQ ID NO:1 or (b) a fragment of (a) which binds Apo-2 ligand and is immunogenic, wherein said antibody stimulates apoptosis in at least one type of mammalian cell in vivo or ex vivo.

25. The monoclonal antibody of claim 21 or 24, wherein said antibody is a chimeric antibody.

26. The monoclonal antibody of claim 21 or 24, wherein said antibody is a humanized antibody.

27. A hybridoma cell line which produces the antibody of claim 21 or 24.

Claim 28 has been cancelled without prejudice.

29. A homodimeric molecule comprising any two antibodies of claims 21, 22, 23 or 24.

30. The monoclonal antibody of claim 21 which is a human antibody.

31. The monoclonal antibody of claim 22 which is a human antibody.

32. The monoclonal antibody of claim 23 which is a human antibody.

33. The monoclonal antibody of claim 24 which is a human antibody.

34. The monoclonal antibody of claim 22 which is a chimeric antibody.

35. The monoclonal antibody of claim 23 which is a chimeric antibody.

36. The monoclonal antibody of claim 22 which is a humanized antibody.

37. The monoclonal antibody of claim 23 which is a humanized antibody.

38. The monoclonal antibody of claim 21 wherein said at least one type of mammalian cell is a cancer cell.

39. The monoclonal antibody of claim 22 wherein said at least one type of mammalian cell is a cancer cell.

40. The monoclonal antibody of claim 23 wherein said at least one type of mammalian cell is a cancer cell.

41. The monoclonal antibody of claim 24 wherein said at least one type of mammalian cell is a cancer cell.